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Russia; wherever the sturged iron-works are wanted  
the Low Moor brand is known. By night the foundry  
is to be seen from afar by the light of the huge blast  
furnaces blazing away like small volcanoes. To  
reach the works, you cross a wilderness - of barren  
cinder 'slag', the refuse of the furnaces, which,  
for nearly a century, has been collecting in  
hills over the place. These great-iron-works,  
which employ some 4,000 men, rest upon the  
North-west corner of the coalfield, where there is much  
ironstone lying in seams, sometimes a few  
inches thick, sometimes several feet.

The interesting little townships of Saltaire lies within  
two miles of Bradford; everyone knows its history,  
the tale, related by Dickens, of how a certain  
Yorkshire manufacturer, with little money to spare,  
sent his sons to Liverpool to buy wool, how, at the time,  
they lay in the yards of a Liverpool merchant - many  
odd little bales of "green looking stuff" which no one  
would buy. People came & turned it over & left it  
where it was, & the merchant did not know what to do  
with the 'neasty stuff' which had been sent to him  
from South America. Now, by a happy chance, the  
young Yorkshireman turned into this merchant's  
yard, pulled out a handful from the open corner of  
a bale, "felt at it, smelt at it, did everything but  
taste it," & carried away a sample in his pocket, -  
to return very soon with up every bale of the useless  
stuff. Rightly, people heard of a new material,  
called alpaca, a shiny, silky, cool stuff, most  
pleasant for summer wear. This was what Mr. Lister  
had made of the odd looking dirty wool he had  
picked up in that Liverpool yard. It was the soft fine  
silky wool - brown, white, or black - of the alpaca, a beautiful  
creature





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villages, churches, grave-yards, have been carried away  
bit-by-bit; & Kananapum, once perhaps a considerable  
port - where Henry of Northwiche landed, has been  
lost - bodily, leaving no trace of its whereabouts  
beyond a surmise that it - stood somewhere  
near Spurn Point. Spurn Point itself, &  
the Bents, as the ridge is called which connects  
it with the mainland, is narrower than a sandbar,  
but - within the Point - new lands are being  
laid down formed of the material which the  
sea has just stripped from the coast - together  
with the mud brought - down by the Kuroshio. The  
wide mud - flats thus laid down are of great  
interest as showing stable land in the very  
process of making.

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up under glacial influences; others, post-<sup>glacial</sup> acting on the softer parts of the rock in the exposed boulders have produced other strange forms.

Nearly three centuries ago, a discovery was made in Knaresborough which drew people in great numbers, but that was then a black common: a loon Knaresborough spring, the oldest, & still, the most fashionable inland watering place of the north. In 1596, the first Spa was discovered by one Sir William Strickland, who had travelled much in Germany & was familiar with the virtues of those continental Spas. Since then, twenty such springs are now known, all more or less bristled with iron or sulphur. The waters of the Chalybeate springs are bracing; those of the sulphur springs are valuable in mercurial disorder & in cases of indigestion. Knaresborough has its pump room, promenade, gardens, &c., the usual attractions of a watering place; but its greatest attraction is the fine, pure moorland air it enjoys.

On the opposite bank of the Rid, ~~which is~~ here a broad full river, rises the ruined towers of Knaresborough Castle, standing on a high cliff overhanging the river, overlooking the town of Knaresborough. Which is more beautifully placed than any town of Yorkshire excepting Richmond. In <sup>the dungeons of</sup> this castle, the murderers of Becket remained in hiding for a year after the commission of their crime: in the 'King's Chamber', Richard III. was confined, before he was taken to Pontefract. During the Civil War the Castle sustained a siege from the Parliamentary forces under Lilburne. Knaresborough has one of the most important corn markets in the county. The Rev. of the Giles, on the bank of the Rid, has a two fold interest, first,



as the dwelling of the holy hermit, St. Robert, bottom even  
 thing John was constrained with horrors; & a late  
 & less pleasant interest as the scene of the murder  
 committed by Eugene Aram.

### Wharfedale.

Of the three fair sister valleys which form the Leannery  
 of Heaven - the upper valleys of the Aire, the Ribbles & the  
 Wharfe - Wharfedale is by far the loveliest. It is the  
 most secluded, too; for the railway ends at Ilkley,  
 you may walk the highways for half a day in the  
 upper valley without meeting a second passenger.  
 Anglers, indeed, find their way up, & stop at the village  
 inns, for the river is famous for its trout. The  
 general credit of Wharfedale suffers from the very fact  
 that it contains Bolton Woods, as lovely a spot as  
 there is in the country; but the whole of the upper valley  
 is park-like; everywhere is a broad bottom of lawn-  
 like pasture, finely sprinkled with trees - ash,  
 oak, & yew, & in the most part - through which  
 the Wharfe winds between wooded banks, & here &  
 there, the fells draw up to the river's brink, now  
 on this side, now on that. Broken forest patches  
 stretch all along these fells, creeping now & then  
 into the <sup>bottom</sup> valley, the remains of a forest which  
 once covered the whole upper valley, & in the  
 clearing, or green stretches of 'high pastures',  
 while, above the lower fells, from the dark wings  
 of the great moors. Below Ilkley, you come  
 upon the inevitable mill chimney of the great  
 Ridding, but, above that charming watering place,  
 the spot

a complete river system, a main stream with many  
 affluent discharging almost the whole drainage of the  
 country into a single noble estuary; & all this, within  
 the limits of Yorkshire itself. It would be easy to  
 show that civilisation has followed the courses of  
 the rivers; that, in their valleys, were planted the great  
 religious houses, the centres of medieval civilisation;  
 & in their valleys, are the great industrial centres  
 of today. Nor is this all. It is not too much to  
 say that its rivers have made Yorkshire; that they  
 have scooped out the habitable places of the earth, &  
 then have spread them with alluvial soil, able to  
 bear food for man & beast; This is true with limitation  
 of the great central valley; no doubt there was low land  
 there before the rivers began to flow - a wide plain, if  
 not a valley: but of the beautiful dales of the West &  
 North Ridings, we may believe that the rivers have  
 carved them out as truly as that they have em-  
 bellished them. Of these, as of other river valleys,  
 the words of Buckley might be received; "that, in point  
 of fact, the present rivers have gradually scooped out  
 their own channels. That our river valleys are,  
 mainly, the result of work performed by rain, rivers,  
 & similar agents of denudation."

Yorkshire people rejoice in the fact - that no English  
 county presents greater varieties of picturesque land-  
 scape than their own. Now 'picturesqueness' is commonly  
 the result of the juxtaposition of the elements of the  
 soft & lovely; & in Yorkshire, such juxtaposition  
 is of continual occurrence: every brown bare  
 moor abuts on a smiling valley; the softness of  
 the valley is broken up by a limestone scar, forbidding  
 as a feudal keep. It is a case of, What's bred in the  
 bone must out in the flesh; the character of the  
 landscape depends upon the nature of the surface  
 rocks; the variety of the landscape, upon the fact  
 that very various strata come to the surface. Therefore



it is impossible to get a lucid idea of the geography of Yorkshire without some knowledge of its geology; & it is only as we know something of the structure of its several rocks, & of their behaviour under atmospheric influences, that we have any explanation to offer of the distinctive features of Yorkshire - fells & fens, caverns, cone & scar.

Perhaps nowhere in the world is the geological history of a region more clearly marked than in Yorkshire. - First, in order of time, & highest in elevation, we have the Western Moors, the Pennine Chain of the fens, & a more or less mountainous tract some ninety miles in length, with an average breadth of thirty miles. Here appear the patriarchs of Yorkshire rocks - the Silurian & Carboniferous Chalk.

Then, stretching through nearly the whole length of the county, but with a breadth no more than four or five miles, we have a band of Permian rocks.

Next succeeds the broad Vale of York, where the original rocks (of the Trias Series) are overlaid with the deposits of the rivers - mud, peat, sand, silt, gravel, clay - that it is these which give character to the landscape, the whole plain is an alluvial valley.

Between the bands of distinctive strata have occupied the whole length of the county from north to south, but eastern Yorkshire did not appear all at once under the same conditions; traversing the county from Ribblesdale to Gressend, & you pass through four regions, with widely different landscapes, marking widely different geological conditions.

Here, following still the order of time, & beginning at the north, we have first: the North-eastern Moorlands, with vegetation not unlike that of the Western Moors, though supported on rocks of far more recent origin. Going south, we cross the Vale of Pickering, & beyond that, its surface rock being boulder clay of glacial origin. Next succeeds the chalk of the Wolds, & lastly, Holderness, consisting of recent deposits, the debris of the rivers of the country.



Continuously as the landscape. Therefore, the agricultural  
 manufacturing industries of a district connected  
 with its geological formation, that Yorkshire may be  
 roughly parcelled out into some six or seven series  
 of landscapes corresponding with the geological divisions  
 we have indicated.

The Silurian rocks, infinitely the oldest series which  
 Yorkshire exhibits, appears in one or two places only. You  
 are surprised to come upon quarries of bluish-green  
 slate in the neighbourhood of Singleton, & again, to the  
 north of Sedburgh, the same hard rocks appear.

The Mountains - or Carboniferous. Limestone forms a district  
 of singular beauty & peculiar character in the north-west  
 of the county. The Gales, Wre, Wharfe, Aire, Ribbles have  
 all cut much of their upper valleys out of the solid  
 limestone, their upper courses give opportunity to study  
 the characteristics of limestone country. Upper  
 Wharfedale, from below is, perhaps, the most beautiful  
 & the most characteristic of these valleys. Like the Tees,

the Wharfe is -

"Condemned to mine a channelled way  
 through the solid sheets of marble grey," -

The clear brown waters, (brown from the peat-moors  
 where they rise) course through a clean swept channel  
 paved with grey slabs. Every now & then, boulders break  
 the current & bring the waters into play; there, the pale  
 hue of the rock is set off by dark drapings of the rich brown moss.  
 Alders hang over the stream; a little higher, are hazel  
 thickets with birch crowns; & in the woods skirting  
 the limestone hills above, the cold grey-green of the  
 ash is the prevailing tint. A special feature of the  
 limestone country is the lovely lawn-like meadows  
 & pastures which fill the lower valleys; for it is the  
 property of the limestone to bear a close short, vividly  
 green turf. The flowers are very abundant & closely -  
 the handsome purple wild geraniums, meadow saffrage,  
 rock cistus, several species of forget-me-not, the yellow pansy,  
 many more. The beauty & variety of the mosses, lichens  
 & ferns, is another feature of the limestone country, again  
 many find, even in natural ferneries, between the limestone  
 slabs

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clash on many a hill-top. the limestone polypody, the green spleenwort, the black maiden-hair spleenwort, the scale fern, the common harts tongue, - in fact, all the ferns proper to the limestone, - very abundant & beautiful, & every plant perfect & delicate in how acid varied under glass.

The great thickness of limestone which overlies this part of Yorkshire is not to be thought of as one solid rock: on the contrary, it consists of an infinite number of layers of varying hardness; here, a rock close & solid as marble, overlying another of loose coarse texture. Now, rain & dew, snow & hail, atmospheric moisture in whatever form, is laden with carbonic acid, derived from the air itself, or from decaying vegetable matters: & water containing carbonic acid in solution has the property of actually dissolving the limestone - not merely wearing it away. How the carbonic acid acts is open to discussion; but the fact remains, & does much to account for the scars, the caves, the pot-holes, the underground streams, the fantastic rock forms of this district. Add to this, the common effect of weathering upon rocks of unequal hardness throughout; how the water percolates the splits, looses chate, freezes, thaws, swells, bursts the rock that holds it as it might burst a pipe, leaves a fissure exposed to the further action of the atmosphere, which is for ever wearing away, as well as dissolving, the yielding limestone. most of this is the history of the fine scars, which stand like many fortresses up & down the Wharfe valley. Dipping water has found its way through the loose joints, carbonic acid in solution has eaten out a way through denser layers, debris, broken off by the one cause or the other, has fallen to the base of the cliff, until there it stands, a rounded bare face of limestone, with harder layers standing out like courses of heavy masonry, steep as the walls of a castle.